October 1965

EMO

NATIONAL DIGEST

The Physician and EHS

New South Wales C. D.

US Home Shelter Survey

Gas Company Emergency Plans

The Army and Civil Defences

EMERGENCY MEASURES ORGANIZATION

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The EMO NATIONAL DIGEST publishes six editions annually to provide current information on a broad range of subjects dealing with civil emergency planning. The magazine is published in English and French and may be obtained by writing to the Emergency Measures Organization, Daly Bldg., Ottawa.

In addition to publishing articles which reflect Canadian Government policy the Digest may also publish articles by private individuals on subjects of current interest to the emergency measures programme. The views of these contributors are not necessarily subscribed to by the Federal Government.

Director General: P. A. FAGUY *Editor:* A. M. STIRTON

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1965

Mr. Paul-André Faguy, Director General of the Federal Emergency Measures Organization since March, 1964, has been appointed to serve on the Commission of Enquiry on Working Conditions in the Post Office Department.

In his new appointment, Mr. Faguy will represent the Department, assisting Judge André Montpetit of Montreal, whom the government named as consultant to review post office working conditions.

Mr. Faguy was educated at Jesuits' College, Laval University, Quebec City, and served during the Second World War with the Royal Canadian Air Force.

In 1945-46, he was Quebec District representative for the Federal Civil Service Commission and Personnel Selection Officer. He then became Assistant Regional Director, Family Allowances and Old Age Security Division for the Federal Department of National Health and Welfare in the Provice of Quebec. In 1953 he was appointed Assistant National Director, Food and Drugs Directorate, National Health and Welfare.

In 1957, Mr. Faguy was appointed Director of Civilian Personnel with the RCAF.

His broad knowledge of civil emergency planning dates back to 1960, when he joined Emergency Measures Organization as Assistant Director, Governmental Arrangements. He held this appointment until he was named Director General of EMO.

Mr. C. R. (Pat) Patterson has been appointed Director General of the Emergency Measures Organization succeeding Mr. P. A. Faguy.

Prior to his new appointment, Mr. Patterson was Director of Operations of the Civil Service, responsible for all staffing activities of the Civil Service of Canada.

Mr. Patterson was born in Portage la Prairie, Manitoba, June, 1918. A 1940 graduate of the University of Alberta, he taught high school prior to being commissioned in the Royal Canadian Armoured Corps during the Second World War. On return from overseas, in 1945, he served with the Department of Veterans Affairs until joining the Civil Service Commission in 1946.

He is a member of the Committee of Management of the Ottawa University Club; a member of the Advisory Board of St. James Anglican Church, Manotick; serves on the National Personnel Committee of the Boy Scouts of Canada; and is an active member, among others, of the Public Personnel Association, the Institute of Public Administration, the Canadian Club, and the Ottawa Field Naturalists' Club.

Mr. Patterson assumed his new position on Monday, September 13, 1965.

THE PHYSICIAN AND EMERGENCY HEALTH SERVICES

Emergency Health Services Precis 3.4

THIS PAPER is entitled "The Physician and the Emergency Health Services". Some physicians may wonder whether there is any connection at all between them and the Emergency Health Services. Others may actively oppose the idea. The majority however have given some thought to the subject since the cold war was declared in the late 1940's. Many have indeed attended courses at the Canadian Civil Defence College, Arnprior and know the basic problems we are facing.

This paper is offered to all physicians to help them visualize how they fit into the scheme of things and to give them a report on the progress made so far in emergency health planning.

We all know that the odds are against war but we hesitate to specify the odds. We spend $1¼ billion each year on National Defence to support the western deterrent effort but only about $26,000,000 each year on civil defence planning to ensure our survival as a nation should the deterrent fail. Only a few physicians can be spared to work full time on this planning and so it falls upon all physicians to prepare themselves as best they can to look after the great medical workload arising from a nuclear attack.

Many Canadians will die, but a far greater number will still be alive after an attack and to them we have a duty.

Peacetime Disaster

We have a duty also to prepare ourselves for peacetime disaster, because "it can happen here". The greatest disaster in human history occurred one fine summer day in peace time. The Tokyo earthquake of September 1, 1923, with its accompanying fire storms, landslides and tidal waves took the lives of 140,000 people and injured a further 104,000 people. Earthquakes, tornadoes, hurricanes, explosions, fires, train wrecks, air accidents and other disasters are striking our growing communities more and more frequently.

All disasters in recent years have been closely studied and many lessons have been learned. One of the commoner and bitter lessons is that we do less than the best for our patients if we do not prepare ourselves and our hospitals for the possibility of disaster.

Let us review a few recent disasters.

Tornado

On June 9, 1953, a severe tornado swept through several communities in Worcester County, Massachusetts injuring 1,500 people and killing 94. The experience of this disaster forms the basis for most of the current hospital and community disaster planning because it pointed out the many things that do go wrong in the absence of planning. Telephone communications failed. Neighbouring police radios were not linked. Casualties were driven to hospitals at high speeds and without first receiving first aid. Although there was little evidence of clinical shock at the scene of the disaster many casualties were found to be in shock on reaching the hospital. Lack of hospital disaster plans caused considerable confusion in several hospitals. Casualties were left lying around outside some hospitals while the public swarmed in. Many operations were performed under primitive conditions with no sterility. Twenty-three major wounds were adequately debrided but all others were closed by primary suture and most became infected. Seven weeks after the disaster the district nurses were treating 600 septic wounds.

Explosions

On October 3, 1962, during lunch-time in a New York office building, a boiler exploded and crashed through a ceiling into a cafeteria. Twenty-one people were killed and 100 injured. This disaster points up the fact that in this modern world disasters can happen wherever people congregate.

On October 31, 1963, a great explosion occurred at the Coliseum Arena in Indianapolis during an ice show. It was caused by leakage from a 100 lb. propane gas cylinder in a popcorn stand. Seventy-two people were killed and 370 injured. It is important to note that 222 (60%) of those injured were not admitted to hospital after treatment. This proportion (about one half) of the injured found not to be in need of a hospital bed is a constant proportion experienced in the great majority of disaster work loads. This fact calls for early and effective sorting so that minor cases can be directed away from the serious cases and more attention paid to the serious cases. Congestion occurred in one hospital when 100 casualties were referred for X-Ray examination before they were given treatment.

Hospital Fires

On December 8, 1961, a fire in a rubbish chute burst out on the ninth floor of the Hartford Hospital in Connecticut. This new hospital building had been described as fireproof, yet sixteen people were killed. Our hospital disaster plans must recognize that the danger of an internal disaster is always present.

On May 27, 1963, there were in the Hotel Dieu St. Vallier in Chicoutimi, Quebec, 805 patients and 1152 employees. A fire started in the book binding depart-

ment and spread to destroy most of the hospital. All persons were safely evacuated but a great problem arose in the disposal of the 805 patients. The neighbouring hospitals also in effect faced disaster because they were required to admit large numbers of patients without warning.

Earthquakes

On March 27, 1964, one of the greatest earthquakes ever recorded occurred in Alaska. Fortunately there were few casualties but one of the hospitals had to admit 60 persons mostly from nearby hospitals damaged during the earthquake. Earthquakes are a definite hazard in Canada. On the West Coast and in the St. Lawrence Valley, there are zones of high earthquake probability in which several severe earthquakes have occurred in recent years. Fortunately so far none have occurred in populated areas, but it is only a matter of time before this will occur.

Air Crashes

On February 1, 1963, a Viscount airliner collided in a cloud with a Turkish Air Force plane and they both fell into the city of Ankara. None of the 71 people air-borne survived and more than 200 people were injured on the ground. The risk of disaster from falling aircrafts is increasing rapidly with the growth of our communities and the increase in air traffic. The crash of the TCA jet at St. Therese, Quebec, on November 29th, 1963, could well have caused many casualties on the ground.

The Emergency Health Services

The Emergency Health Services organization was established in Canada for the purpose of assisting the health services of the nation prepare to meet the problems of war. An early decision was made to assist them also in their preparation to meet the problems of peacetime disaster as a step towards the achievement of the primary purpose.

Emergency health planning was begun in the early 1950's by a Civil Defence health planning group. In 1959, the national policy became one of requiring all agencies with responsibility for a function in peacetime to prepare themselves to continue operating in time of war. Disaster planning became in effect a normal function of management. This policy recognized that control will not and cannot be assumed by a different agency when disaster strikes and that our nation's health services must be prepared to carry on under all circumstances. One new agency, the Emergency Measures Organization, had to be established to perform a role of coordination and to take responsibility for emergency functions not covered in peacetime by existing agencies.

The role of the Emergency Health Services Division of the Department of National Health and Welfare may then be summarized as follows:

to ensure that the Department of National Health & Welfare is itself able to continue operating in time of war.

to assist and advise provinces and municipalities in emergency health planning.

Emergency Health Services Program

The activities of the Emergency Health Services planning staffs at all levels of government are grouped into six major programs.

Continuity of Government Program

In the performance of its first role the Emergency Health Services are making arrangements for health departments to continue operating in alternative locations should the peacetime locations be threatened. These arrangements call for:

The selection and preparation of the alternative buildings.

The assembly and maintenance of essential documents, equipment, and records in the alternative locations.

The nomination and training of key personnel and their alternates.

The education of all other personnel on their responsibilities to their families and to their departments.

The preparation of draft Emergency Health Orders and Regulations under the War Measures Act or equivalent provincial standby legislation.

The preparation of detailed departmental orders specifying the action to be taken by all employees when so instructed should international tension increase.

It can be said that the federal health department has reached an advanced state of planning under this program, that several provincial health departments and a very few municipal health departments have made good progress. There is much more to be done, however, particularly by the health departments in those municipalities liable to suffer damage or destruction in a nuclear attack.

A complex of Emergency Headquarters has been established in Canada for use by federal departments and those provincial and municipal departments in threatened areas. Each province has been divided into one or more zones, each with a Zone Emergency Headquarters to provide an intermediate level of control. Provincial and municipal health departments should be well represented in these Headquarters.

Organizational Program

It was apparent that planning groups similar to the federal Emergency Health Services Division would have to be set up in provincial and municipal health departments for the purposes of ensuring continuity of their own departments and of preparing all agencies

of the health services to meet disaster. Eight provinces have now appointed full time staff and the remaining two have designated officers on a part time basis.

Most of the provinces have established an Emergency Health Services Advisory Committee, similar to a national committee, made up of representatives of the various provincial colleges, societies and associations.

There is an urgent need for the establishment of an Emergency Health Services planning organization in every Canadian municipality, be it in a threatened area, an area designated for the reception of casualties and evacuees, or in any other area. Municipalities not directly affected by a national disaster will certainly be called upon and be willing to send assistance to those who are. A physician, perhaps the medical officer of health, should be officially appointed by the municipal government as the Municipal Emergency Health Services Director and he should be made responsible for the emergency health planning of the community. This involves in most cases planning the casualty care services and the emergency public health services. A considerable amount of advice on how this may be done has already been published (e.g. "Hospital Disaster Planning"—1964 Chapter 8) published by the Department of National Health and Welfare and available through provincial Emergency Health Services Directors.

Under the organizational program, the Emergency Health Services have recognized that existing health agencies and organizations form the basic structure of an emergency service. In the first place, encouragement is given to hospitals to carry out disaster planning. This encouragement has consisted of the presentation of a series of hospital disaster planning institutes across Canada, the publication of manuals, the offer of special disaster supplies to hospitals with approved plans and the announcement by the Canadian Council on Hospital Accreditation that disaster planning is an essential requirement for accreditation.

In the second place, encouragement is given to health units to concern themselves with planning to meet the public health problems of disaster. A series of special courses is being conducted at the Canadian Civil Defence College, Arnprior, for public health physicians, nurses and others in the team.

Informational and Educational Program

This program forms a major part of the total Emergency Health Services effort. We are aiming at the public in an attempt to make family units self sufficient for the first seven to fourteen days of a national emergency. To this end we provide information on measures to deal with likely health hazards through brochures, pamphlets, displays and other media of communication. In addition, we place great emphasis on a comprehensive first-aid and home-nursing training program.

We are also directing information and educational programs at the health worker in two distinct areas. In recognition of the fact that it is unreasonable to expect any individual to perform an emergency function if his family is in danger, we make information on family survival planning available to all health workers.

The second part of this program involves the training of workers in the professional aspects of their emergency functions. This training is conducted at both the undergraduate and postgraduate level. Six of twelve medical schools at present teach some aspects of emergency medical care, and measures are under way to expand this project. All schools of nursing conduct some training in emergency nursing care, and we hope to improve and standardize this teaching. Suitable training is also being incorporated in curricula for sanitary inspectors and other health workers.

The major problem rests in the field of continuing postgraduate education in disaster medical care. Most of this training to date has been carried out centrally at the Canadian Civil Defence College, but during the past years provincial health authorities have expanded this program by means of courses, seminars and institutes conducted within the provinces.

This program may well receive considerable support from the Disaster Medical Care Committees of the Canadian Medical Association if they are established as proposed.

Operational Planning Program

As more health workers acquire the necessary planning and operational capability required to work in an Emergency Government Headquarters and as more emergency medical units are released to communities, so it becomes more possible to develop realistic operational plans for the deployment of all health resources in a national emergency.

The gross allocation of medical units from the national stockpile to provinces is based on analyses of the patient workloads likely to arise from national attack patterns defined in target probability studies. Emergency Health Services Directors at provincial, zone and municipal levels are or should be making more detailed analyses of the problems and arriving at plans to provide specifically for the care of casualties. Included in each of these plans should be a plan for the deployment of all available emergency medical units.

To support such deployment plans, an emergency medical unit's prepositioning program is being undertaken. This is aimed at storing these units in or close to the actual locations where they may have to be used.

In the event of a nuclear attack the prepared plans would be implemented by the Emergency Health Services staff at Emergency Government Headquarters to an extent determined by the actual casualty workload and the actual damage to health resources. Procedures for rapidly measuring these factors are being developed.

Resources Analysis Program

Detailed surveys of all existing health resources in Canada are being completed. They give us information on our resources in health manpower, health supplies and health installations.

One of the more complex surveys already completed is a record of the manufacture and storage of all pharmaceuticals in Canada. With the help of the Dominion Bureau of Statistics we now have full knowledge of pharmaceutical resources to assist us with our planning. This information will help us now with our stockpile program and in the event of an attack it will help us measure our surviving resources with a view to advising the War Supplies Agency on production priorities during the six months post-attack period. To this end, we have developed a basic list of items which will be essential for continuing medical care in Canada under austere conditions. This is known as the Critical List.

National Emergency Health Supplies Stockpile Program

The Federal Government has authorized the establishment of a national stockpile of health supplies and equipment amounting to $21,500,000.

This stockpile contains both packaged units and bulky resupply items designed to provide medical care for 200,000 casualties. The packaged units consist of hospital disaster kits, advanced treatment centres, 200-bed emergency hospitals, public health laboratories and blood services depots.

Agreement has been reached with the provinces for the release of hospital disaster kits to hospitals in possession of approved disaster plans and for the release of Advanced Treatment Centres to communities. In addition, negotiations are under way for the release of other packaged units as the emergency organizations are developed. The next and most important step is for specified communities to arrange to receive these units and to prepare themselves to use them.

The Physician

By this time each physician will see where he fits into the picture. His direct responsibilities appear to take three general forms:

Leadership

Being one of the more educated persons in a community, the physician is looked to for advice and guidance on many matters. He should be prepared to take positive leadership in the fields of community health planning for disaster and hospital disaster planning. People will follow leaders and they will certainly contribute to a community effort if they see their doctors are giving it support. To converse is even more true.

Every hospital in Canada would have specific action to take in a national disaster. Their responsibilities are described in the Emergency Health Services manual "Hospital Disaster Planning—1964". Every community is constantly exposed to peacetime disaster and should have its plans ready. A chapter in the manual recommends a number of steps to be taken within a community to achieve this end. Much of this work falls upon the physician.

Professional Care

The medical care given to large numbers of casualties in a disaster must necessarily differ from that given under normal conditions, and physicians should familiarize themselves with the practice and principles developed through the real and hard experiences of earlier disasters.

This knowledge is available to us in the Second Canadian Edition of the NATO Handbook "Emergency War Surgery". This edition was published in English and in French by the Emergency Health Services Division of the Department of National Health and Welfare and copies have been distributed to every physician and hospital in Canada. If you do not have one, write to your Provincial Health Services Director.

Physicians should come to some agreement in their hospitals on the standardization of medical care in disaster because when disaster strikes there is no time for discussion and patients will have to be treated on "mass production" lines. This subject also is covered in the handbook.

Management of Casualties

Physicians should have an understanding of the principles of casualty care developed by the military medical services and upon which the Emergency Health Services are making plans for handling large numbers of casualties arising from a major civilian disaster. They are:

The establishment of echelons of medical care,

The practice of sorting casualties into priorities for evacuation and for treatment,

The standardizing of treatment at each echelon of medical care,

The provision of early resuscitation and life-saving surgery,

The employment of the surgical techniques of early debridement and delayed primary suture.

Chiefly by these means the military medical services have raised the ultimate survival rate of those casualties leaving the battlefield alive from the basic 83.3% rate of the Crimean War to the 96.4% rate of the Korean War, one hundred years later. The early medical care consisted of little more than the provision of shelter, warmth, food and simple nursing care while

(Continued on Page 9)

NEW SOUTH WALES CIVIL DEFENCE

This paper "The Responsibility of Government Departments in Civil Defence Operations" was presented to heads of N.S.W. government departments in February, 1965, by Major-General Ivan N. Dougherty, Director of Civil Defence, N.S.W. It is reprinted from their "Civil Defence Bulletin".

WHEN Heads of Departments visited the State Headquarters of our Civil Defence Organisation in September last year, I outlined the problem that would face us all in time of war, and I also gave an outline of the civil defence plan for New South Wales together with a résumé of progress we have made to date.

I indicated that there are two parts to the responsibility of Government Departments in regard to civil defence. Firstly, there is a need to have plans in each Department to ensure the protection and control of personnel under the Department's jurisdiction, the keeping up of morale, and the continuance of the Department's functions. Civil Defence officers have been appointed in Departments to take care of this first aspect of their responsibility.

Secondly, there is the responsibility for Departments to carry out their full functions in time of disaster. The effective discharge of this responsibility will depend on the making of detailed plans and preparations in advance—and that means starting NOW.

One of the basic principles underlying the making of civil defence plans and preparations, and the conduct of civil defence operations in time of emergency, is that Government Departments and Instrumentalities will carry out at this time the functions for which they are responsible in peace time.

In time of emergency the difficulties facing Departments will be magnified many fold, approximately in proportion to the magnitude of the disaster.

Unless plans and preparations have been made by Departments in advance, they will not be able to discharge their responsibilities effectively in these times. Hence plans should be laid now, and all preparations that can be made should be made as expeditiously as possible.

In time of emergency there will be a number of actions for which no Government Department is responsible in peace time, and these actions, together with such plans and preparations as are necessary to make them possible, will be the responsibility of the Directorate of Civil Defence. The Directorate of Civil Defence will be the co-ordinating authority, both in the planning stage and during operations, and will have the responsibility of advising and assisting all other Departments.

The notes below have been compiled to assist Departments when making the appreciations on which their plans and preparations will be based. Departments and Instrumentalities are listed by Ministerial Department, taking into account, where appropriate, the functions and responsibilities of Sub-departments. In order to carry out effective and co-ordinated planning it is suggested that each Ministerial Department should appoint a senior officer as Chief Civil Defence Planning Officer. This Planning Officer would be responsible to the Head of the Department for the preparation of the plans for his Department and Sub-departments, and for the making of all preparations that are possible in advance of the emergency. Each Sub-department would need its own Civil Defence Planning Officer, to develop in detail the plans and preparations that should be made by the Sub-department.

The notes on the responsibilities of Departments follow. They merely list those aspects of planning and preparations to which Departments should direct their attention, and, being given as a guide, they are not necessarily exhaustive.

Department of Agriculture

(1) Biological (or bacteriological), aspects of warfare as applied to crops and animals.

(2) Chemical warfare aspects, as applied to crops and animals.

(3) Radioactive fallout on crops and animals—checking of levels of contamination and countering its effects.

(4) The supply of uncontaminated seed and breeding stock (or semen as appropriate).

(5) Prevention of indiscriminate slaughtering of stock, in order to maintain potential for breeding.

(6) Purity of milk and other agricultural products for human consumption, after attack using nuclear, biological or chemical weapons.

(7) Soil testing after radioactive fallout, and the giving of advice to farmers as to agricultural procedures to be followed after nuclear attack.

(8) Preservation of essential records, formulae and so on.

Department of Attorney-General and Justice

(1) Continuance of all legal processes, Courts, etc., having in mind changes in population distribution due to evacuation or other causes.

(2) Removal of dangerous prisoners from possible target areas, or other places when there are special reasons, to other prisons, and the release on parole of certain other types of prisoners.

(*Department of Prisons.*)

(3) Preservation of vital records such as those of births, deaths and marriages; land titles; companies and deeds, etc.; prisoners' personal details; fair rents.

(*Registrar-General's Department, Department of Prisons and Fair Rents Board.*)

Chief Secretary's Department

(1) Bush Fire Brigades to undertake certain additional duties such as town protection where regular brigades are withdrawn to fight fires in target areas.

(2) New South Wales Fire Brigades to be prepared to fight fires on a vastly increased scale.

(*Board of Fire Commissioners.*)

(3) Lord Howe Island to be considered.

(4) Such other actions as appropriate.

Department of Child Welfare and Social Welfare

(1) Participation in the Civil Defence Welfare Service by trained social workers in order to give guidance to evacuees, homeless and so on.

(2) Provision of the Department's normal services, having regard to the re-distribution of population following evacuation from target areas.

Department of Conservation

(1) Provision of uncontaminated water for crops, stock and people.

(*Water Conservation and Irrigation Commission.*)

(2) Fire Fighting.

(*Forestry Commission.*)

(3) Such other actions as are appropriate.

Department of Education

(1) Continuing the education of children, having regard to the re-distribution of population following evacuation. This will involve, *inter alia,* some reallocation of teaching staff as between city and country areas, and the provision of addition buildings for schools, stores, equipment, etc.

(2) Protection of children, including evacuation of schools.

(3) Preservation of historical documents, paintings, other works of art, museum specimens, etc.

(*Public Library, Art Gallery and Australian Museum.*)

(4) Thought to be given to special schools, e.g., those for deaf and blind children.

Department of Public Health

(1) Provision of adequate hospitals, (including existing and auxiliary hospitals) to meet the needs of the community, including the care of casualties resulting from enemy attack. This will involve consideration of personnel, buildings, equipment, drugs, etc.

(2) Evacuation of mental hospitals in target areas, and the release of patients from other mental hospitals, wherever possible.

(3) Food inspection to ensure that only uncontaminated food is provided for human consumption.

(4) Inoculation, etc., of members of the public, as regarded necessary to counter the effects of biological warfare.

(5) Testing of water, and general analysis work, particularly in the event of chemical and/or biological warfare.

(6) Sanitation and hygiene, to prevent the spread of disease under the conditions that could follow an attack.

(7) Assistance by the Radiation Branch on matters relating to radioactive fallout.

(8) Advice to the Director of Civil Defence on such matters as the teaching of first aid and home nursing, which will be conducted, in the main, under the supervision of civil defence controllers.

(9) The raising and training, in the hospitals, of Forward Medical Aid Units which can be sent forward and placed under the tactical control of civil defence controllers.

(10) Preservation of vital records, formulae, etc.

Department of Lands

(1) Preservation of vital land tenure records.

(2) Assistance in meeting the mapping requirements of the Civil Defence Organization.

Department of Local Government

(1) Supply of electricity to essential services, including water supply authorities, hospitals, sewerage treatment plants, food processing establishments, abattoirs, factories, and so on. This involves power generation as well as reticulation.

(*Electricity Commission and the Electricity Authority*).

(2) Maintenance of, and/or restoration of, the gas supply.

(3) Continuity of Local Government.

Department of Main Roads

(1) Road clearance and removal of debris, to permit the movement of fire fighting equipment, rescue columns, first aid and ambulance companies and Forward Medical Aid Units, and other vehicles on supply or other essential missions.

(2) Repair of bridges and roads.

(3) Support by heavy units, as arranged, for the Civil Defence Rescue Service.

Department of Mines

(1) Investigation of Mines for potential use as fall-out shelters.

(2) Steps to maintain mines in such condition that they can become productive quickly after the emergency.

Premier's Department

(1) Planning, in co-operation with the Directorate of Civil Defence, to ensure continuity of Government. This will include plans for an alternate seat of Government.

(2) The War Book—co-ordination with overall civil defence plans.

(3) Completion of plans for Police Department's role in civil defence operations.

(*Police Department*).

Department of Public Works

(1) In co-operation with Department of Main Roads, road clearance and removal of debris to permit the movement of fire fighting equipment, rescue columns, first aid and ambulance companies for Forward Medical Aid Units, and other vehicles on supply or other essential missions.

(2) Water supply and sewerage, particularly in country areas.

(3) Alternate port facilities, possibly involving dredging. Clearance of damaged ports.

(4) Protective construction works on essential buildings, and public shelters.

(5) Demolition of dangerous structures.

(6) Support by heavy units, as arranged, for the Civil Defence Rescue Service.

Department of Technical Education

(1) Continuing with education of students, as appropriate.

Ministry of Transport

(1) Provision of trains and buses for the evacuation of target areas, the conveyance of casualties, the conveyance of life-saving units and the conveyance of food and other essential supplies.

(*N.S.W. Government Railways and Department of Government Transport.*)

The Treasury

(1) Maintenance of and/or restoration of water supplies and checking level of contamination of water.

(Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board.)

(2) Arrangements for ships to clear port in the event of impending attack; alternate port facilities (see also Department of Public Works); repairs to port facilities; control of shipping in waters under Maritime Services Board's jurisdiction under conditions of emergency.

(*The Maritime Services Board.*)

(3) The provision and distribution of supplies and equipment of all kinds.

(*Government Stores Department.*)

Note:

I have mentioned the need for preservation of records in the case of some departments. This will, in fact, apply to all Departments. The preservation of vital records, formulae and so on would be of supreme importance. ▲

The Physician and Emergency Health Services—*Concluded*

the medical care given by the United Nations Medical Services in Korea was up to the best modern standards. A full account of these principles particularly the first principle is given in Chapter I of the Handbook.

Emergency Health Services plans call for the deployment of Advanced Treatment Centres to provide sustaining or second echelon care, so that serious casualties may survive the journey back to hospitals in neighbouring communities. These hospitals will form with the help of the 200-bed Emergency Hospitals, from the stockpile, the third echelon level of care, that of life-saving surgery.

Minor Casualties which usually constitute half the total will be treated at Emergency Clinics and then lodged by the Welfare Services.

Conclusion

A physician has definite and great tasks to perform when disaster strikes his community or his country and a responsibility to prepare himself for these tasks. The Emergency Health Services of Canada are being developed to help him in his preparation and performance. Physicians are in fact the core of the Emergency Health Services. ▲

U.S. HOME SHELTER SURVEY

Test survey being conducted by the Office of Civil Defense for evaluation of fallout protection in homes.

THE BASIC OBJECTIVE of the U.S. civil defence program is to provide protection for all the population against the radioactive fallout that would result from an enemy nuclear attack.

The principal way this is being done is through the development of a nation-wide system of dual-use, public fallout shelters—that is, by designating the basements and inner cores of larger buildings for use as fallout shelters in time of emergency without interfering with the normal peacetime, day-to-day use of those areas. As a result of a National Fallout Shelter Survey, public shelter space for over 130 million persons has already been located; shelters with an aggregate capacity of nearly 71 million have been marked with shelter signs; and austere survival supplies for two weeks for more than 30 million have been placed in them. (All statistics are as of March 25, 1965.)

To bring more public shelters into being, these are the principal measures being taken by the Office of Civil Defense, in cooperation with State and local governments:

1. The National Shelter Survey is being continued and is identifying additional existing structures that contain suitable public shelter space.

2. A simple, low-cost, portable ventilation kit is under development that will permit the use of public shelter space that is now inadequately ventilated, and will also increase the capacity of some already-established public shelters.

3. A nation-wide "smaller structures survey" is being undertaken to identify existing buildings that contain shelter space for less than 50 persons, which is the present minimum size for public shelters.

4. Architects and engineers are being encouraged and aided to include dual-use fallout shelter space in the original design of new buildings being constructed.

Finally, to assure most effective *utilization* of all shelters, public and private, a new Community Shelter Planning program was initiated in FY 1965 by the Office of Civil Defense. This is designed to aid a community in assigning its residents to specified shelters, in facilitating movement to shelters when necessary in time of emergency, in identifying deficiencies of shelter in relation to need, and in developing new resources to meet the community's shelter requirements.

To supplement the nation-wide system of public fallout shelters, and thus provide fallout protection for citizens who have no public shelters available to them, OCD is encouraging the continued construction of private home shelters and, in addition, is undertaking the Test Survey described herein to determine the degree and extent of fallout protection that already exists in homes with basements.

Brief Account of the Test Survey

Starting in March and ending in May or June 1965, the Office of Civil Defense will conduct a Test Survey to evaluate the fallout protection that now exists in homes with basements. The U. S. Bureau of the Census, acting as agent for OCD, and Ohio State University will assist OCD in planning, conducting, and tabulating the results of this survey.

The primary purposes of the Test Survey are to:

1. Obtain refined information as to the degree and extent of fallout protection offered by existing one-family and two-family homes with basements in the United States as they now stand.

2. Determine the reliability of information gathered by means of mail questionnaires and analyzed by automatic data-processing methods.

Approximately 25,000 householders distributed throughout all 50 States will be asked to fill out and mail back brief, simple questionnaires describing the structural characteristics of their homes. Eight hundred of the dwellings for which questionnaires are returned will be checked by follow-up visits of professional architects and engineers.

Using electronic data-processing machines and methods, the Census Bureau will tabulate those returned questionnaires (estimated at 18,000) that pertain to one-family and two-family dwellings with basements. From this tabulation, OCD expects to obtain a reliable estimate of the total potential shelter offered by the nation's homes. In addition, the Test Survey experience and results will give OCD a clear indication of the adequacy of this questionnaire, whether automatic data-processing methods can be used to evaluate the fallout protection offered in private homes, and whether revisions in the method are necessary. In addition it will provide a reading on the expected response of the nation's householders.

Objectives of the Test Survey

The Test Survey is intended to furnish the Office of Civil Defense reliable estimates or indications of:

1. The number of one-family and two-family dwellings with basements having a protection factor* of 40

*A Protection Factor (PF) expresses the relationship between the amount of radiation from fallout that would be received by an unprotected person compared to the amount that he would receive if inside a shelter. For example, a person inside a shelter with a PF of 40 would receive only 1/40 the radiation he would receive at an unprotected location.

or more. This is the minimum standard of protection that OCD has established for all public fallout shelters.

2. Whether the simple, nontechnical information furnished by a householder on a questionnaire is sufficiently accurate for OCD to determine the degree of fallout protection offered by that dwelling, and if not what additional information is needed.

3. The degree to which householders will respond to questionnaire-type surveys of fallout protection in homes, or whether some other method need be explored to obtain information on the protective characteristics of existing unmodified United States residences with basements.

How the Test Survey Will Be Carried Out

The Test Survey will have three phases, which will follow each other in this sequence, with some overlapping: (1) The mailing-out of questionnaires to the 25,000 householders, and follow-up on those not returned, (2) Technical evaluation of the 800 selected "control" dwellings by trained fallout shelter analysts working under the direction of Ohio State University, and (3) Tabulation of all returned questionnaires by the Census Bureau, and analysis by OCD of the entire Test Survey results and procedures. These three phases of the Test Survey are discussed below.

1. *The Mailing-out of Test Survey Questionnaires, and Follow-up*

The Census Bureau already has a list of approximately 25,000 householders living in aproximately 700 counties in all 50 States. These householders have been carefully selected to represent an authentic cross-section of the nation's citizenry with reference to locations, age groups, incomes, educational levels, etc. This list of 25,000 householders has been used in other "structured sample" surveys conducted in the past by the Census Bureau for various purposes.

The Census Bureau and the Office of Civil Defense have designed a simple questionnaire on which those 25,000 householders will be asked to answer 12 questions concerning the structural characteristics of their homes.

In March 1965 the Census Bureau will mail these questionnaires from Washington to the 25,000 householders. They will be addressed to "Head of Household" at each specific address. Each recipient will be asked to fill out the questionnaire, sign his name and address, and mail it back to the Census Bureau in Washington. No postage will be required.

The Census Bureau will make three follow-ups on householders who have not returned their questionnaires. The first follow-up will consist of a form letter. The second will be a registered letter with a duplicate questionnaire enclosed, in case the householder misplaced the first one. As a final follow-up, householders still not heard from will be contacted personally or by telephone by the nearest field office of the Census Bureau and encouraged to fill out their questionnaires and mail them back to Washington. After these three efforts, it is estimated that over 90 percent of the questionnaires will have been filled out and returned.

2. *Technical Evaluation of the 800 "Control Group" Dwellings*

In the latter part of April 1965, a "control group" of 800 householders, living in one-family and two-family dwellings who have filled out and returned their questionnaires, will be selected. Their names and addresses will be furnished to the Engineering Experiment Station of Ohio State University, Columbus, Ohio. This control group will consist of two householders from each of the 400 communities included in the Test Survey.

The OSU Engineering Experiment Station has prepared, from the Defense Department's "National Directory of Architects and Engineers Qualified in Fallout Shelter Analysis," a list of architects and engineers who are located in or near the 400 communities. The Engineering Experiment Station will contract with these qualified fallout shelter analysts to personally visit the 800 householders and evaluate the fallout protection offered by their dwellings. To do this, each shelter analyst will use precise engineering methods of calculating the protection from fallout radiation offered by each home.

The information gathered by the shelter analysts concerning the 800 dwellings in the control group will be sent back to the OSU Engineering Experiment Station. After an analysis there, the information will be forwarded to the Office of Civil Defense in Washington. From these data, OCD will be able to determine: (a) whether householders have filled out their questionnaires properly, and (b) whether the questionnaire method for data gathering and computer analysis will provide an accurate measure of the fallout protection offered by the surveyed dwellings.

3. *Analysis of all Returned Questionnaires and of the Entire Test Survey*

As the Census Bureau receives the questionnaires returned by the 25,000 householders, it will transfer the information from them onto electronic data-processing cards and separate the cards covering one-family and two-family dwellings from those covering other types of residences (apartments, hotels, rooming houses, trailers, etc.).

Using data-processing machines and electronic computers, the Bureau will tabulate the data pertaining to one-family and two-family dwellings (representing an estimated 80 percent of the returned questionnaires).

Based on the results of these three phases, OCD will be able to reach sound conclusions concerning the "Objectives of the Test Survey". ▲

CANADIAN GAS COMPANY EMERGENCY PLANS

New Control Station at Calgary

Canadian Western Natural Gas Co. Ltd. is a fully integrated gas utility serving Southern Alberta with headquarters at Calgary. Gas is supplied from eight sources, five of which are major gas plants from which we purchase gas and three are Company owned fields. In addition there are interconnections to the gas export system and to Northwestern Utilities Ltd., a sister Company with headquarters in Edmonton, supplying gas to Central Alberta. The flow from these several sources is controlled by operators at the Calgary Control Station. (Page 14)

To keep in touch with the various gas supply sources the operators use a Company owned telephone system, a Company owned radio system and the facilities of the Alberta Government Telephone System. The Company telephone connects Bow Island and Foremost fields, Turner Valley field and the cities and towns in between. A total of fourteen carrier signals, indicating gas pressure conditions or gas flows, are carried on various parts of this telephone circuit. Additional carrier signals are carried on the radio circuits connecting the Carbon and Jumping Pound gas fields to the Control Station. Other signals on leased telephone wires bring data to the operators about pressures at various other key points in the Distribution System in Calgary and ensure that adequate supplies of this premium fuel are available at all times, and especially in rapidly changing weather conditions.

In addition to all this information, the operators keep up to the minute on all weather conditions, so that additional supplies are on the way well in advance of falling temperatures. This load dispatching of course is a twenty-four-hour-a-day job, and is carried out by four skilled men under the direction of the Superintendent of Production and Transmission. These men also regulate flows to care for any necessary shut downs both in the transmission network and in the city distribution system, occasioned by new construction or maintenance of existing equipment.

As in all other up-to-date utilities, a considerable amount of thought has been put into a plan for action in case of war or national emergency. The Civil Defence of the City of Calgary calls for evacuation of the population and its dispersion in the countryside up to a hundred or so miles from the city. Not everyone will be evacuated. Indeed, in severe winter weather it is possible than many would refuse to move. Those who did move would leave behind them their closed-up homes with heating plants still functioning to prevent the house water systems from freezing.

Accordingly, it is vitally necessary that trained servicemen of the utility remain behind to look after any calls for service either in houses left unoccupied or for shutting off the gas supply to any fire calls being

The control building is seen on the left and the odorizer building on the right. The radio tower is in the centre. The dome on the control building is translucent and gives a striking accent, especially at night.

handled by the Fire Department. Emergency repair crews for the Distribution Department would also remain to deal with leaks or damage to the gas mains and services.

The second illustration shows the board in the station which tells the operator the conditions at various locations in the whole system. The centre panel contains the actual operating controls by which pressures are increased or reduced, as well as other operating controls. A considerable space on each end of the board allows for future growth. This board is located to face outward towards the large windows of the building shown in the photograph. Behind the board are various rooms housing chart storage, radio equipment, a small kitchen and a toilet and washroom. Photo 2 shows some of the radio equipment. In the third illustration the interior of the odorizer building with some of the equipment is seen. All piping is below grade, housed in reinforced concrete with concrete block superstructure faced with brick.

In the odorizer and pressure control buildings all lighting is vapor proof. Floors are of reinforced concrete and in the Control Station portion are covered with vinyl asbestos tile. The translucent dome in the centre of the building is a striking accent.

Leading out of the control room is a stairway to the shelter in the basement. This stairway follows the curve of the outside wall and ends in a right angle turn to avoid blast. The shelter area is of ample size for a crew to live in and has, leading off it, a toilet, washroom and shower, and again a small area for food preparation. On the opposite side from the stairway to the control room is another stairway leading to the outdoors.

The station is designed for protection against blast and fallout only. It is not intended to withstand a near miss with an atomic weapon. The heating equipment can recirculate the air in the building after filtering and cleaning, and although the inside air would probably become somewhat unpleasant, the operators could remain at their posts in comparative safety for many days. In Calgary there is nearly always a wind and fallout should not be a prolonged problem.

The operator can see by a glance at this control board the conditions at the various locations within the entire system.

Besides presenting a unique appearance and relieving the rather standardized architecture of the buildings in the neighborhood, this station is functional and efficient. The radio tower, which would normally upset the balance of the design, has been embodied in the over all pattern to produce a pleasing impression. When the landscaping is completed this summer, we believe our station will be an example for other industries to follow.

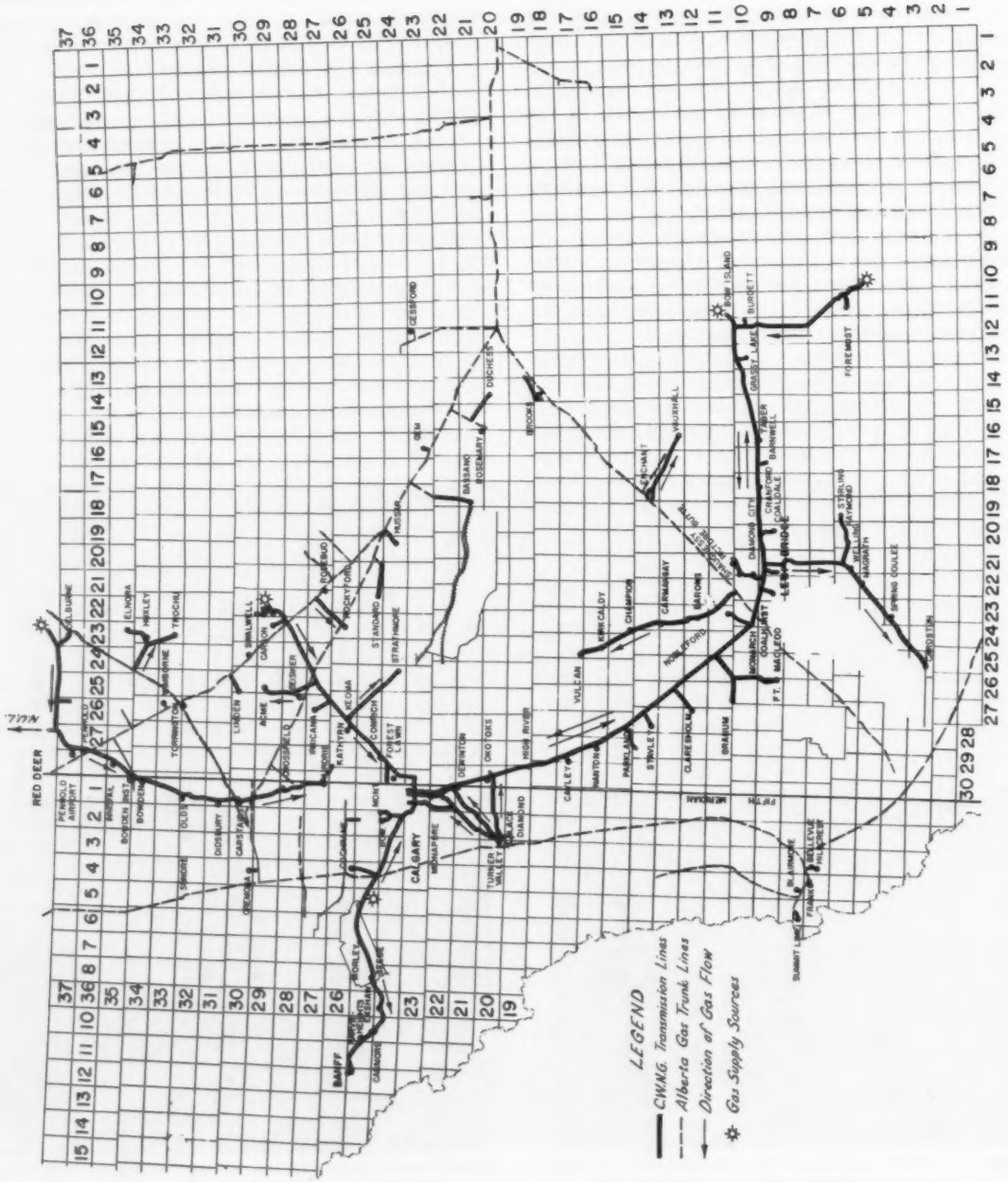
Transmission repair crews would be quartered in four locations to the north, south, east and west of the city, and would be able to cope with any damage occurring in their sector. These crews would all be in touch with the Control Station and each other by mobile radios. Mobile radios are part of the Company's ordinary equipment, and are mounted in the service trucks. Being battery operated they are independent of local conditions. As the range of these radios is limited largely to line-of-sight, those crews out of town would be out of touch were it not that repeater stations, necessary for the ordinary operation of the transmission system, are located so that widely increased coverage is made possible. In the event of an enemy attack or of satotage, our communications system is expected to continue to function normally.

The first Control Station for Calgary was built in 1912. Despite repeated additions and replacement, it eventually became inadequate and a new station embodying the latest developments was planned. For the purpose of this paper the technical end of the design is not necessary. The piping and control components of the station have been designed to allow for considerable expansion and growth. The matters of interest here are the operators' comfort, convenience and safety.

The Station consists of three buildings. The illustration on page 12, taken from the southwest and looking northeast, shows the control building on the left and the odorizer building on the right. Behind the odorizer building is the building housing the equipment to reduce the gas pressure from transmission pressure to distribution pressure. The radio tower is in the centre of the picture.

Here is a vital section of the odorizer building with its complex of pipes, pressure regulators and recording screens.

SOUTHERN ALBERTA NATURAL GAS
FLOW MAP


LEGEND
C.W.N.G. Transmission Lines
Alberta Gas Trunk Lines
Direction of Gas Flow
Gas Supply Sources
RED DEER
CALGARY
BANFF
EDMONTON
LETHBRIDGE
MEDICINE HAT
FORT MACLEOD
PINCHER CREEK
COLEMAN
BLAIRMORE
BELLEVUE
HILLCREST
FRANK
CROWSNEST PASS
TURNER VALLEY
OKOTOKS
HIGH RIVER
VULCAN
CHAMPION
CARMANGAY
BARONS
STAVELY
CLARESHOLM
GRANUM
NANTON
CARDSTON
STIRLING
RAYMOND
MAGRATH
SPRING COULEE
WARNER
COUTTS
DIAMOND CITY
CHANCELLOR
CROSSFIELD
BURDETT
BOW ISLAND
MEDICINE HAT
REDCLIFF
MEDICINE HAT AIRPORT
SEVEN PERSONS
SUFFIELD
ROLLING HILLS
ROSEMARY
DUCHESS
BROOKS
GLEICHEN
HUSSAR
STRATHMORE
STANDARD
CROSSFIELD
CARSTAIRS
OLDS
DIDSBURY
BOWDEN
INNISFAIL
BENTLEY
PENHOLD
PENHOLD AIRPORT
ELNORA
HORLEY
TROCHU
CREMONA
CROSSFIELD
AIRDRIE
BEISEKER
CROSSFIELD
CROSSFIELD
AIRDRIE
KATHYRN

THE ARMY AND CIVIL DEFENSE

This article by Robert Lamson was reprinted by the Office of Civil Defense, Department of Defense from the Military Review, December 1964.

ON 31 MARCH 1964 the Secretary of Defense, Robert S. McNamara, transferred the Office of Civil Defense to the Secretary of the Army. This continued a trend toward greater military interest in civil defense and toward strategies and forces which can limit damage in the event of nuclear war—on missiles used for counterforce missions, antiballistic missile and air defense, and fallout protection for military forces which survive the blast and fire of nuclear attack.

Expanded awareness of two facts has increased the military services' interest and involvement in civil defense:

- If the military services are to perform their missions in the event of attack, then fallout protection is crucial. Without fallout protection, those forces which survived blast and heat and were located within the lethal fallout pattern would not be able to perform any missions—combat or civil defense.
- Civil defense interacts in important ways with other elements of US military strategy, and top civilian and military leaders of the US Armed Forces realize that civil defense is or at least should be, an integral part of our over-all defense strategy.

In their public statements US military leaders have viewed civil defense as important, not only for limiting damage in the event deterrence fails, but also as a supplement to deterrence itself. They recognize that three functions of military power—to punish, to deny territory, and to limit damage—can influence the cost-gain calculations of a potential adversary and thereby deter him from hostile acts. They affirm that if our deterrent threat to punish aggressive acts should fail to dissuade aggressors from attacking, then civil defense preparations, along with counterforce missiles, antiballistic missiles, and air defenses could be important for limiting damage.

Damage Limitation

Since the damage-limiting goal of civil defense is the same as that of ballistic missile defense, air defense, and counterforce operations, the question arises: What is the relative cost/effectiveness for damage reduction—particularly for saving lives—of these different damage-limiting systems?

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The general conclusion which has emerged from repeated cost/effectiveness studies is that the lifesaving potential of additional investment in a fallout shelter system is superior to that of additional increments in either counterforce weapons or antiballistic missiles. In fact, Secretary McNamara, in referring to his discussions of strategic retaliatory and continental air and missile defense forces, stated before the House Armed Services Committee that:

. . . a well planned and executed nationwide civil defense program centered around fallout shelters could contribute much more, dollar for dollar, to the saving of lives in the event of a nuclear attack upon the United States than any further increases in either of these two programs.

Moreover, it has been estimated that a fallout shelter system would save millions of lives even in the absence defenses. Neither counterforce missiles nor antiballistic missile and air defenses are necessary for the effective of counterforce operations and antimissile and air operation of a shelter system.

Defense officials have also stressed the crucial function of fallout protection because it interacts in several important ways with damage limitation:

- Fallout protection is a prerequisite for the effective operation of an antiballistic missile system—in defending cities, for example. Without fallout protection for the population, the antimissile system could be bypassed by fallout generated by nuclear ground bursts upwind of the target areas.
- The buildup of deterrent nuclear striking power is, in great part, provided by a system of dispersed and hardened intercontinental ballistic missiles. Under the assumption that an enemy would strike at this system, severe fallout problems could be created because of the increase in the proportion of fallout-generating ground bursts needed for a hardened target. Fallout protection is essential to offset the drastic effects thereby created.

In the assignment of civil defense to the Department of Defense, and in its subsequent transfer to the Secretary of the Army, a key problem has been one of organization—of how best to organize available personnel and resources to save lives, to limit damage, and to rebuild if attack should ever come. What, for instance, should be the extent of compulsion and of Federal control and assistance to state and local civil defense? What should be the extent of involvement by various elements of government and society—particularly by active military, Reserve, and National Guard units—in civil defense?

Proper answers to these questions can only be based on such factors as the character of the passive defense problem; the capacities of civilian organizations and military units to deal with the problem; the traditional military combat missions which the armed services may be required to perform; and the political principles which we wish to protect and promote.

If nuclear attack should ever occur, the widespread and severe damage from blast, heat, and fire would disrupt much of the Nation's transport and communications. Pinned down by fallout radiation and isolated from other surviving communities, many undestroyed areas could not hope for immediate outside aid.

If the local community organizations are to continue to survive and rebuild, they must be able to exist for a period of time, using their own resources and skills, before outside aid arrives and while communication and transportation links are reestablished, debris is cleared, and before radioactivity decays or is removed.

Having survived immediate destruction by blast, heat, and fire, these communities must, if they are to continue to survive, have fallout protection along with the supplies, skills, manpower, and organization which would enable them to use this protection.

Local and widespread strength in civil defense is, therefore, essential if the surviving elements of society are to endure the immediate postattack period and go on to rebuild. This requires tens of thousands of strong, well-trained, and well-equipped community organizations which can survive with little or no assistance immediately after attack. It requires a capacity for civil defense at every level and in every branch of society—public (Federal, state, and local) and private (industry, schools, and hospitals).

The need for local strength and self-sufficient survival during and after attack, however, must be reconciled with the requirements for Federal control and direction if the United States is to ensure that a civil defense system is built at all, that what is built is operationally adequate and of uniformly high quality, and that Government direction is maintained or quickly reestablished if attack should occur.

Adequacy of Control

Some critics question the adequacy of present Federal control and assistance, which now consists of aid to state and local authorities to develop civil defense plans and operations. These critics say that Federal control should extend beyond the present eight regional offices of the Office of Civil Defense because, under a nuclear attack, no one state has the resources adequate to save lives, to limit damage, and to rebuild. Moreover, the critics feel that because Federal control extends only to the regional level, it is difficult to develop an operationally adequate civil defense system and to maintain the quality of the program and of its personnel.

Existing Skills

It is because of the need to combine the central control, support, and standards of the Federal Government with the creation of a capacity of the smallest organizational unit to survive under severe conditions that many civil defense burdens have been placed upon state and local governments, and on private organizations.

Therefore, much of the creation, maintenance, and operation of the fallout shelter system depends upon state and local governments to perform certain functions—the creation of shelter, the movement to shelter, shelter management, radiological monitoring, decontamination, and rescue operations.

The responsibility for creating a widespread local civil defense capability cannot be avoided by placing major reliance on either the military services or on volunteers. It is hoped that by making maximum use of existing skills and organizations—government, military, and private—the need for a massive specialized force of Federal civil defense personnel can be avoided. An organization to meet civil defense requirements must, therefore, go beyond the Federal Government to include the trained professionals who have skills for emergency action and who are employed by state and local government, by industry, and by other private organizations. These skills include those of police, firemen, plant guards, doctors, architects, engineers, and transportation and communications personnel.

Admittedly, the Armed Forces—particularly the Army and its Reserve components—can be of great assistance to civil authorities. If nuclear attack should occur, most of the land area of the United States would not be directly affected by the blast, heat, and fire effects of nuclear explosions, but would be affected by fallout. Some areas might even escape fallout altogether. In those areas not directly affected by blast, heat, and fire, it is hoped that local, state, and regional organizations for civil defense could cope with the situation without need for military support.

In the areas of total destruction—within a certain radius from ground zero—military support would be futile. But in the zones between the areas of total destruction and the area affected only by fallout—where blast, heat, and fire had caused less than total destruction—there would be need for reentry and rescue actions by nearby undamaged communities and by available military forces. Since the location of these damaged zones would be uncertain, mobile military support would be needed to help civil authorities fight fires, monitor and decontaminate radioactive areas, clear debris, rescue the injured, and assist in medical care, feeding, law enforcement, traffic control, transportation, and communications.

The earthquake in Alaska, for example, provided a practical demonstration of military support to civil authorities in time of disaster.

No Substitute

Although their potential for damage reduction in peacetime and wartime is well known, the military services are not and cannot be a substitute for the numbers, skills, and locations of civil authorities in the event of a nuclear holocaust. The military services contain but a small proportion of the total manpower and equipment needed to build and operate an effective passive defense system. In fact, even if all the military personnel and equipment in the United States were used for civil defense, this would represent less than three percent of the Nation's manpower and equipment potential.

Moreover, the President may give higher priority to combat operations than to using military forces to support civil authority. Overdependence on the military services to perform civil defense tasks could create a lack of flexibility if a President should want to use military forces for combat operations as well as to support civil government.

There is a further important reason for placing large civil defense responsibilities on civil authorities. This is the need, before attack, for maintaining a society which is civilian in character with civil control of military functions; and if an attack should ever come, the need for quickly restoring civil authority, control, and government wherever it may break down or disappear.

To aid in defining the proper extent of military support, the Deputy Secretary of Defense in July 1962 created a task force on civil defense.

Critics had felt that the then existing military support doctrines and assumptions lacked realism. They questioned the adequacy of mobilization plans, the use of reservists, and the definition, priority, and planning for civil defense support missions. These criticisms, combined with an understanding of problems the armed services would face in surviving and protecting their own personnel from fallout, led the critics to believe that civil defense was unlikely to receive proper assistance from the military services in the event of nuclear attack.

In the light of such criticisms, the task force—composed of the Under Secretaries of the three services, a general officer from the staff of the Joint Chiefs of Staff, the Assistant Secretary of Defense (Manpower), and the Assistant Secretary of Defense (Civil Defense)—studied the conditions for military support and defined proper suport missions and mobilization needs.

During the Cuban crisis in October 1962, the Department of Defense, among other actions, put one task force recommendation into effect by giving retirement point credit to Reserve officers of the Standby Reserve who participate in civil defense.

Military Support Directive

Six months after the Cuban crisis, on 23 April 1963, a new Department of Defense directive, "Military Support of Civil Defense", embodied many more of the task force's recommendations. The directive outlined the actual, or at least desired, strategic functions of civil defense before, during, and after attack, and stated the conditions, principles, missions, and responsibilities for military support.

It also stated that the development of preattack and postattack military support missions would be based on a range of possibilities which included general thermonuclear attack with minimum warning and conditions favorable to the atacker. Under this possibility, the directive recognized that damage could be so severe and Federal and state control so tenuous that responsible officials would have to choose between using military forces for civil recovery at home or combat operations overseas.

Mission Defined

The military support mission was defined:

In the event of a national emergency involving a nuclear attack on the United States, the Armed Forces will employ available resources which are not required at that time for offensive or defensive operations to assist civil authorities to restore order and civil control, return essential facilities to operation, prevent unnecessary loss of life, alleviate suffering, and take other actions as directed to insure national survival and a capability on the part of the Nation to continue the conflict. In such employment established military organizational channels and prearranged plans will be followed when possible.

Certain units, active or reserve, will be required to undertake missions to plan for the coordination and control of military support for civil defense both preattack and post-attack.

As a guide to executing the support mission, the Defense Department said:

- Military support to civil authorities in civil defense operations is an emergency task within the mission of all Federal active duty and Reserve units of the military services. All units (with minor exceptions) are, therefore, required to maintain the capacity to assist civil authorities in an emergency in restoring Federal, state, and local civil operations. Such operations would supplement and be coordinated with local capabilities, and would include restoration of utilities; emergency clearance of debris and rubble; fire protection; rescue, evacuation, and hospitalization; recovery and disposition of the dead; radiation monitoring and decontamination; interim traffic control; and the interim maintenance of law and order.

- The amount of military support of the civil defense mission during and after the attack will depend upon the extent and degree of damage suffered, and upon the military operations in process or required.

- Military assistance of civil authorities will complement and not be a substitute for civil participation

in civil defense operations, since it is a temporary measure which will be terminated as soon as possible in order to conserve military resources and to avoid infringement on the responsibility and authority of civil government agencies.

- In order to preserve the integrity of the military chain of command, a military commander, in making his resources available to civil authorities, is subject to no authority other than that of his superior in the military chain of command.

Coordination and Control

The directive also assigned to the Department of the Army primary responsibility for providing military support and for coordinating and controling the use of the active and Reserve forces made available by all military services, before and after attack. It has been necessary, therefore, for the Army to establish planning and coordinating activities to coordinate and control those forces.

At about the same time that the military support directive was being issued—in April 1963—the Under Secretary of the Army presented to the Association of State Adjutants General an organizational concept for military support. This concept was subsequently approved by the State Adjutants General.

It provided that the Headquarters and Headquarters Detachment of the National Guard in each state would be used as a state-level military headquarters for civil defense support. This would satisfy the need for a military headquarters in each state to plan for and control military support operations in civil defense emergencies—under the supervision of an appropriate army commander, and under the existing military chain of command.

In the event of attack, the State Adjutants General and their headquarters staffs would be called into Federal service and placed under the command of the various continental army commanders. The State Adjutants General would exercise operational command over the military resources within their states (including Reserve and Active Army units) which were made available by the army commanders.

They would also be responsible for premobilization planning and preparation of the military support of civil defense. The Governor of each state would work through his Adjutant General to participate, before mobilization, in the military support plans affecting his state, and after mobilization, to request military support.

To study methods of implementing the concept, the Chief of Staff of the Army appointed a planning group at US Continental Army Command consisting of representatives from the CONARC staff, the continental armies, the Navy, the Air Force, and the Office of Civil Defense. The planning group submitted its final report on 4 March 1964.

In addition, and to protect their ability to perform combat or civil defense missions after an attack, the military services are taking steps to provide fallout protection at military installations. The Army, for instance, is requiring that commanders of installations in the Zone of Interior provide fallout protection for all personnel, including dependents and civilian employees. All military posts of all services participated in the national shelter survey, and many military buildings are now marked and stocked as public shelters.

Present Plans

Present plans for military support of civil defense are tailored to major metropolitan target areas in order to provide disciplined and mobile military cadres prepared to deal with conditions in the outer fringes of blast, heat, and fire damage areas.

In the Second Army area, for example, there are target complex support plans for certain specified metropolitan centers. These plans involve the use of all military forces and resources within a 160-kilometer radius of a target area which are not used on a higher priority mission. These plans are based on the political structure of state and local civil defense organizations.

This type of plan is being supplemented by area-type planning under the control and direction of the continental army commanders and of the military headquarters which will be established within each state. This will provide for more complete coverage of the United States and will retain the flexibility desirable in the uncertain conditions after attack.

Within the continental United States, the civil defense support mission of all military units is second only to their combat mission. If a civil defense mission is assigned, survival operations will be conducted by military units under two conditions: where civil government is capable of operating, the continental army will provide assistance at the request of civil authority as a supplement to civilian effort; and where civil authority has disappeared, the continental army will conduct survival operations under martial law, if necessary, in order to restore civil authority and control as early as possible.

Clearer View

The placing of civil defense in the Department of Defense resulted in a clearer view of the relation of civil defense to US military strategy, particularly to the elements of that strategy concerned with damage limitation.

With the transfer of civil defense to the Secretary of the Army, new strategic defense responsibilities have been added to the Department of the Army's already existing responsibilities to develop an antiballistic missile system, and to operate the system if there is a decision to deploy it. The transfer also served to integrate civil defense functions with Department of the Army activities. The resources of the Army, as

well as of the other services, were already being used in such civil defense functions as the national shelter survey conducted by the Army Corps of Engineers and the Navy Bureau of Yards and Docks.

In the transfer of civil defense responsibilities, civil defense was emphasized as being primarily a civilian responsibility which could not be minimized by either increased military support or by further integration with strategic defense and with other Army activities. In fact, Secretary of the Army Stephen Ailes stated before the House Appropriations Committee that:

. . . the delegation of civil defense responsibilities from the Secretary of Defense is a personal one to me. Under the terms of this delegation, the Army staff has no responsibilities. I have redelegated authority to Mr. William P. Durkee who has been designated the Director of the Office of Civil Defense, Department of the Army. He will report directly to me. The civilian nature of the leadership, supervision, and control are in no way changed by this action.

Throughout the changes and clarifications in the relation of civil defense to military strategy and in the Army's civil defense support role, there have been certain important problems which civil defense will continue to encounter in the Department of the Army, just as it did previous to and during its operation in the Department of Defense. These problems involve the task of balancing such potentially diverging demands as:

- The need for effective military support to civil defense while not jeopardizing traditional military combat missions.
- The need for strong state and local civilian organization while building effective Federal control and military support.
- The need for civilian control and responsibility for civil defense while maintaining effective military support, and at the same time integrating certain civil defense functions with Army activities and with strategic defense.

By far the most important task is the need to build a system which will effectively save lives, limit damage, and rebuild if an attack should occur. ▲

ALASKA REPORT BY PRESIDENT JOHNSON

The following letter from President Lyndon B. Johnson to the President of the Senate and the Speaker of the House of Representatives was made public on August 20, 1965

I have the honor to transmit herewith a report of activity under authority of Public Law 88-451 which covers actions taken by five Federal departments and agencies to assist in the recovery of Alaska following the earthquake of March 27, 1964.

The Act, entitled, "1964 Amendments to the Alaska Omnibus Act", was designed to speed additional aid to Alaska following the earthquake.

This report covers the period from January 1, 1965, through June 30, 1965. During the period covered in the report, more than 30 million in grants and loans were furnished Alaska under Public Law 88-451. During the twelve-month period since the amendments have been in force, $52 million have gone to Alaska. This assistance is only a fraction of the total recovery programs that the Federal Government has provided. Submission of this report to the Congress, as required by Public Law 88-451, also affords an opportunity to review briefly the total assistance to Alaska and its meaning to the State.

As of this date, more than $336 million in grants and loans have been made to the State, its communities and its people. Of this amount, nearly $163 million has been in the form of direct grants and still another $91 million in loans to individuals, business concerns, and other organizations. The remainder is for the repair of damaged Federal facilities in Alaska.

This means that $1,360 per citizen has gone to Alaska since the earthquake.

Today, Alaska has substantially recovered from the earthquake. Scars remain, but the worst effects have been overcome by the stamina, courage and resources of Alaska's people aided by speedy and significant Federal assistance of many kinds.

Repairs to Alaska's highways are virtually complete. Damage to airports has been repaired. The Alaska railroad is running again on a full schedule and with new equipment. Most schools have been repaired or rebuilt. Docks and harbors are being repaired and expanded to meet the growing needs of the populace. Lifeblood industries have fully recovered from the devastating blow. The fishing industry was put back on its feet at such a rapid rate that it was able to increase its catch by 100 million pounds during 1964, for an increased value of $11,600,000.

The per capita income of the Alaskan citizen has increased from $2,850 at the time of the earthquake to $3,154 today, an increase of 11 percent.

At no time in recent years has an individual State suffered such a catastrophe and at no time was such a massive and effective program of Federal assistance carried out. It is a tribute to the individual citizens of Alaska, to the Congress, and to the thousands of State and Federal personnel who worked tirelessly in the hours and months that followed this tragedy.

The future of Alaska is one of great potential and immediate fulfillment. The damage and dislocation left by the earthquake are gone and the destiny of our forty-ninth State is once again bright with promise.▲

CANADIAN EMERGENCY MEASURES COLLEGE

PRESS RELEASE

OTTAWA, JULY 21—A change in the directing staff of the Canadian Civil Defence College at Arnprior, Ont., resulting from appointments by the Civil Service Commission, was announced by the Emergency Measures Organization in Ottawa today.

Mr. Walter E. Garber, 52, formerly Chief Instructor, has been appointed Principal of the College succeeding Mr. C. Leslie Smith, 57, former Commandant.

Mr. Smith has been appointed to Emergency Measures Organization headquarters in Ottawa before he will become Programme Evaluation Officer. In his new position he will be responsible for the development of measures to assess the degree of operational readiness of civil emergency planning.

The Director General of the Emergency Measures Organization, Mr. Paul A. Faguy, also announced that the government has approved a change of name for the federal college. The Canadian Civil Defence College will now be known as the Canadian Emergency Measures College.

The new Principal of the college Mr. Garber was born in Bridgewater, Nova Scotia. He received his high school education in that city before going on to studies at LaSalle University, Chicago.

Mr. Garber joined Canadian Army militia in 1930 and served during the Second World War with the West Nova Scotia Regiment in the United Kingdom, Italy and Northwest Europe. After the war he was appointed to the Royal Canadian Regiment.

He attended the Canadian Army Staff College in 1948. After completing Staff College he served at Army Headquarters from 1948 to 1951; as an exchange officer with the U. S. Department of the Army 1951 to 1954; commanded the First Battalion Canadian Guards 1954 to 1958; was a member of the Directing Staff of the Canadian Army Staff College, Kingston, 1958 to 1962 and Chairman of the Canadian Army Examination Board in 1962. He retired from the Army in 1963 on appointment as Chief Instructor of the Canadian Civil Defence College.

Mr. Garber is married and has two daughters. He is a member of the Grace St. Andrews United Church, Chairman of the Missionary and Maintenance Fund, Member of the Committee of Stewards and Member of the Arnprior Town Planning Board.

Mr. Smith, of Edmonton, Alberta, served during the Second World War with the Royal Canadian Armoured Corps. Upon being wounded and invalided to Canada in 1943, he became Assistant Director for Vehicle Armament and Development, Department of National Defence.

Following the end of the war he assisted in developing the Casualty Rehabilitation Programme for the Department of Veterans Affairs.

In 1950 Mr. Smith was appointed to the Canadian Civil Defence College and was subsequently made Director of Training and Education for the Federal Civil Defence Organization in Ottawa. He assumed command of the Canadian Civil Defence College in 1960. ▲

MR. GARBER

MR. SMITH

If undelivered return to:
EMERGENCY MEASURES ORGANIZATION
Daly Building,
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